III. Remarks

Claims 1, 3 to 7, 9 to 11, 20 to 23, 25 and 27 to 30 have been amended to define clearly the Applicants' invention. Claims 16, 18, 19, 24, 26 and 31 have been cancelled without prejudice or disclaimer. New claims 32 to 38 have been added to define further aspects of the Applicants' invention. Claims 1 to 5, 7 to 13, 20 to 23, 25, 27 to 30 and 32 to 38 are now pending in the present application and are believed to distinguish patentably over the prior art.

In the Official Action, the Examiner has rejected claims 7, 8 and 21 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Claim 4 has been amended to correct its dependency and thereby provide proper antecedents for the terms recited in dependent claims 7, 8 and 21. Accordingly, Applicants respectfully request the Examiner to remove this objection.

With respect to prior art, the Examiner has rejected claims 1 to 5, 7, 9 to 13, 20, 25 to 28 and 30 under 35 U.S.C. §102(a) as being anticipated by European Patent Application No. 0777394 to Belpaire ("Belpaire"). The Examiner is alleging that the Applicants' invention as defined by these claims is clearly shown by Belpaire. Claims 16, 18 and 19 have been rejected under 35 U.S.C. §103 (a) as being unpatentable over Belpaire. The Examiner is alleging that the Applicants' invention as defined by these claims would be obvious to one of ordinary skill in the art in view of the teachings of this reference. Claims 8, 21 to 24, 29 and 31 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Belpaire in view of U.S. Patent No. 5,682,460 to Hyziak et al. ("Hyziak"). The Examiner is alleging that the Applicants' invention as defined by these claims would be obvious to one of ordinary skill in the art in view of the combined teachings of these references. Applicants respectfully submit that the Examiner's objections to the claims in view of the cited references are not appropriate for the reasons set forth below.

According to one aspect of the Applicants' invention as defined by independent claim 1, Applicants provide a communication system including at least two communications networks over which communications between physical devices connected to the communication networks are to be carried. The communication networks implement different protocols for messaging. A communication server acts between the communication networks and through which messages transmitted between the communication networks pass. The communication server includes a

knowledge base storing protocol conversion information. The communication server accesses the knowledge based upon receipt of a message and searches the knowledge base for appropriate protocol conversion information. During the searching, the communication server initially uses a header of the message as a key to searching the knowledge base for the protocol conversion information. If the search fails, the communication server uses a body of the message as the key to searching the knowledge base for the protocol conversion information. The communication server converts the protocol of the received message to a protocol compatible with the communication network to which the message is being sent using the determined protocol conversion information.

In contrast, Belpaire discloses a mail service gateway coupled between a network that supports electronic mail and a network for mobile communications where a short message service is provided. The mail server gateway decomposes each incoming electronic message and embeds successive parts thereof in successive short messages which are then transmitted through the mobile communication network toward the destination mobile terminal. When a message is received by the mail server gateway, filtering means subtracts overhead from the message and outputs a naked message. The destination for the message stripped by the filtering means is fed to destination translation means. The naked message is processed to detect the presence of voluminous data objects and such data objects are replaced with short codes to form output data. The output data is decomposed into data blocks which can be encapsulated one by one in a short message. Extension data is added to each block prior to transmission to the destination mobile terminal.

Hyziak discloses a method for selecting transmission preferences and associated constraints to be used during the transmission of information in a communication system for reasons such as cost, security, urgency, reporting options, disposition requests and/or spectral efficiency. The communication system includes a wireline communication network and wireless communication network coupled by a system server. The system server is coupled to a wireless transceiver to facilitate communication with wireless devices. Messages transmitted within the communication system include a header, a destination list and a message body (including a status field). The header includes a destination ID field that either identifies a peer device to which the information is intended or the system server. The destination list includes a list of one or more selected destinations that are to receive the message body. Each entry in the list includes a destination name, a logical address and a set of preferences. As messages are created and

transmitted, a historical database of user preferences during message creation and transmission is maintained.

Applicants respectfully submit that neither of the references cited by the Examiner teaches or suggests a multiple pass knowledge base searching process to determine protocol conversion information wherein initially a header of a received message is used to locate the protocol conversion information and if the search fails, the body of the received message is used to locate the protocol conversion information. Belpaire teaches to strip a header from a received message and use the header to determine the destination. The message body is processed to reduce its size and then it is broken down into blocks which are encapsulated one by one in a short message. Hyziak simply teaches a message structure that identifies a peer device as well as one or more destinations for the message. The message bodies of the Belpaire and Hyziak systems are not used to determine protocol conversion.

Accordingly, Applicants respectfully submit that independent claim 1 distinguishes patentably over the cited references either alone or in combination and should be allowed. Since claims 2 to 5, 7 to 9 and 20 are dependent either directly or indirectly on independent claim 1, which is deemed allowable, Applicants respectfully submit that these claims should also be allowed.

Independent claim 10 defines a communication server including a virtual gateway that initially searches the knowledge base for appropriate protocol conversion information using a header of the received message as a key to locating the protocol conversion information in the knowledge base and uses a body of the message as the key if the initial search fails or if the message does not include a header. As stated above, neither Belpaire nor Hyziak teaches or suggests such a communication server wherein a knowledge base of protocol conversion information is initially searched using a message header and then using the message body if the initial search fails. Accordingly, Applicants respectfully submit that independent claim 10 distinguishes patentably over the cited references and should be allowed. Since claims 11 to 13 and 21 to 23 are dependent either directly or indirectly on independent claim 10, which is deemed allowable, Applicants respectfully submit that these claims should also be allowed.

Independent claim 25 defines a communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocol. The communication server includes a knowledge base storing protocol conversion information to convert messages of one protocol to a different protocol. A

virtual gateway accesses the knowledge base for protocol conversion information upon receipt of a message to be transmitted between the virtual devices and converts the protocol of the message to a protocol compatible with the network to which the message is being sent. The virtual gateway updates the protocol information in the knowledge base based on message traffic therethrough.

The Examiner alleges that Belpaire inherently discloses updating the protocol conversion information based on message traffic. Applicants respectfully disagree. Belpaire simply discloses a destination translation table memory that includes for each destination identifier used in the first network, an associated destination identifier used in the mobile network. There is nothing in Belpaire to teach or suggest that protocol conversion information in a knowledge base is updated based on message traffic i.e. that the knowledge base is self-learning or self-updating. Accordingly, Applicants respectfully submit that the Examiner's objection to this subject matter in view of Belpaire is inappropriate and should be removed. Since claims 27 to 29 are dependent either directly or indirectly on independent claim 25, which is deemed allowable, Applicants respectfully submit that these claims should also be allowed.

Independent claim 30 defines a communication server including a self-updating knowledge base and a virtual gateway that initially searches the knowledge base for protocol conversion information using target logical connection information in a header of a received message and if the search fails, searching the knowledge base for protocol conversion information using target logical connection information in the body of the message. As stated above, Applicants respectfully submit that the references cited by the Examiner fail to teach or suggest such a communication server. Accordingly, Applicants respectfully submit that this claim should be allowed.

New independent claim 32 defines a communication system including a communication server that follows a multi-pass search procedure to locate protocol conversion information with each pass of the procedure using a different portion of the message as a key to searching a knowledge base for the protocol conversion information. As stated above, neither of the references cited by the Examiner teaches or suggests such a multi-pass search process using different portions of a message during each pass to locate protocol conversion information. Accordingly, Applicants respectfully submit that this claim should be allowed. Since claims 33 to 35 are dependent either directly or indirectly on independent claim 32, which is deemed allowable, Applicants respectfully submit that these claims should also be allowed.

New independent claim 36 defines a communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols including a virtual gateway that initially uses target logical connection information in the header of the message to search a knowledge base for protocol conversion information and then uses target logical connection information in the message body when the initial search fails. Applicants respectfully submit that this claim distinguishes patentably over the cited references for the same reasons stated above. Since claims 37 and 38 are dependent either directly or indirectly on new independent claim 36, which is deemed allowable, Applicants respectfully submit that these claims should also be allowed.

In view of the above, it is believed the application is in order for allowance and action to that end is respectfully requested.

Respectfully submitted,

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